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REMARKS

Applicants appreciate the notification of allowable subject matter, i.e., that claims 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Claims 10-18 are pending in the application. The specification has been amended to include section headings, as indicated in the Office Action. Page 3, lines 7-8 of the specification has been amended to eliminate reference to a specific claim number. No new matter is added. The amendments are fully supported by the specification as originally filed.

Applicants' claimed invention relates to a method for picture insertion into video pictures (picture-in-picture insertion, or "PIP"), where a smaller picture is inserted into a main television picture and can be viewed at the same time as the television picture.

For picture-in-picture insertion, it is necessary to store the smaller picture (also known as an "inset picture") in a frame memory in order to delay the picture signal of the inset picture, so that the inset picture is displayed synchronously with the main picture at a predetermined location on a display device, e.g., a television screen. Synchronization with the main picture is effected using vertical and horizontal synchronizing signals.

Referring to FIGS. 1A and 1B, if the line duration of the main picture changes, the inset picture (EB) changes its position within the main picture (HB) a number of times per second, and consequently the viewer sees a jittery inset picture. However, according to the Applicants' claimed invention, the position of the inset picture is independent of line duration of the signal for the main picture. In particular, the line duration of the main picture is measured by determining the time duration between two successive horizontal start pulses of the main picture (the "determining" step of claim 10). Then, the horizontal position of the inset picture with respect to the main picture is determined by calculating the number of pixels from the beginning of a line of the main picture to the desired horizontal position of the inset picture depending on

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the time duration determined between two successive horizontal start pulses (the second step of claim 10).

Details of this calculation are recited in claim 11, where the actual number of pixels b_{actual} from the beginning of a line of the main picture is obtained by multiplying the desired number of pixels b_{desired} of the horizontal position of the inset picture with respect to the main picture by a ratio of the actual line duration of a line of the main picture to a nominal line duration.

In other words, the Applicants' claimed invention provides a method for carrying out picture-in-picture insertion by calculating the horizontal position of an inset picture with respect to the beginning of a line of a main picture depending on the time duration between two horizontal start pulses of the main picture.

Claims 10-16 were rejected under 35 USC 103(a) as being unpatentable over European Publication No. 0 318 986 to "Suzuki" in view of Japanese Publication No. 10-013760 to "Ryuichi." This rejection is respectfully traversed.

The Suzuki and Ryuichi references, whether taken alone or in combination, fail to teach or suggest inserting an inset picture into a main picture based on the time duration between two horizontal start pulses of the main picture.

Suzuki relates to an apparatus in which an inset picture ("second picture") is inserted into a main picture ("first picture"). In Suzuki, to compensate for clock signal deviations between the first and second pictures, the width of a horizontal pulse of the first picture is measured using a pulse counter. In order to determine the correct horizontal position of the second picture with respect to the first picture based on the calculated pulse width (see column 2, lines 2-13). Referring to FIG. 3 of Suzuki, a pulse counter 30 measures the pulse width and supplies the measurement to a controller 36, which determines the horizontal start position (see column 5, lines 7-20).

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On page 5 of the Office Action, it was stated: "determining two start pulses (1P) is met by the pulse width of the horizontal synchronism pulse signal H_s and the oscillator 104 which generates the horizontal position counting pulse of the picture or character signal generator 100."

With reference to FIGS. 5 and 6 of Suzuki, a synchronism oscillator 103 receives a horizontal synchronism signal H_s and "oscillates in synchronism with the horizontal synchronism signal II_s ," as described with reference to FIG. 2 (see column 6, lines 49-57). A position on the screen in the horizontal direction is determined by counting the pulses generated by the oscillator 103 (column 7, lines 7-10).

Therefore, Suzuki does not teach or suggest the step of determining the time duration between two start pulses, as recited in claim 10. Instead, Suzuki measures the width of a horizontal pulse by using a pulse counter.

On page 6 of the Office Action, it was stated that Suzuki does not "disclose the claimed determining the time duration between two start pulses." However, the Ryuichi reference was cited to remedy this deficiency.

In the Office Action, the Abstract of Ryuichi was cited, but it was not explained how Ryuichi relates to the Applicants' claimed invention. Instead, Ryuichi merely discloses to calculate time durations between edges or pulses of a horizontal synchronization signal H and a reference signal R_f .

In Ryuichi, the time duration T1 between a pulse of the horizontal synchronization signal H and the reference signal R_f is calculated. However, these signals do not correspond to the "start pulses" recited in claim 10. Indeed, the signals H and R_f in Ryuichi are two different types of signals, and are not "start pulses" of the type recited in the Applicants' claimed invention.

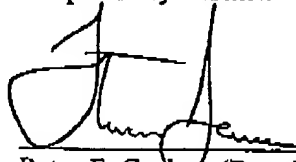
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Moreover, Ryuichi cannot be combined with Suzuki to somehow produce the Applicants' claimed invention. In Suzuki, horizontal position is adjusted after measuring the width of a horizontal pulse using a pulse counter. If the method of Suzuki were somehow altered to measure the time duration taught in Ryuichi, it would not be possible to produce the Applicants' claimed invention, for at least the reasons discussed above. Moreover, measuring the time between signals H and Rf in Ryuichi is incompatible with the pulse width approach disclosed in Suzuki; therefore, such references cannot be combined to produce the Applicants' claimed invention.

Accordingly, claim 10 is patentable over the Suzuki and Ryuichi references, whether taken alone or in combination, for at least the reasons discussed above. The combination does not teach or suggest a step of determining the time duration between two horizontal start pulses of a main picture in order to calculate the horizontal position of an inset picture with respect to a main picture based on the determined time duration.

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,



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